

**Before the
Federal Communications Commission
Washington, D.C. 20554**

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| In the Matter of |) | |
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| Revision of Part 15 of the Commission's |) | ET Docket No. 13-49 |
| Rules to Permit Unlicensed National |) | |
| Information Infrastructure (U-NII) |) | |
| Devices in the 5 GHz Band |) | |
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To the Commission:

**Comments of Nickolaus E. Leggett, N3NL
Amateur Radio Extra Class Operator, Inventor, and Analyst**

I am a certified electronics technician (ISCET and iNARTE) and an Extra Class amateur radio operator (call sign N3NL). I hold an FCC General Radiotelephone Operator License with a Ship Radar Endorsement. I am an inventor holding three U.S. Patents. My latest patent is a wireless bus for digital devices and computers (U.S. Patent # 6,771,935). I have a Master of Arts degree in Political Science from the Johns Hopkins University.

I am one of the original petitioners for the establishment of the Low Power FM (LPFM) radio broadcasting service (RM-9208 July 7, 1997 subsequently included in MM Docket 99-25). I am also one of the petitioners in the docket to establish a low power radio service on the AM broadcast band (RM-11287). I have filed a total of over 200 formal comments with the FCC over the years since the 1970s. I have filed comments with other Federal agencies as well including the USPTO, FAA, FERC, EPA, and the TSA.

My Comments

The Commission should make sure that some amateur radio operation on 5 GHz is protected so that it can continue in the future. This is desirable because amateur radio operators can contribute notable innovations and inventions to the radio and electronics state-of-the-art. This activity is most effective if the amateur radio operators have useful access to a variety of radio frequency bands.

One such innovation was suggested by John A. Carroll, W1PK. Mr. Carroll is an Extra Class amateur radio operator with a station in New Hampshire. He has suggested that amateur radio Earth-Moon-Earth (Moon bounce) communications as an emergency communications mode. (Reference One) The Moon can serve as a communications relay reflector that will serve locations on Earth that are in view of the Moon. This direct contact is available regardless of the status of the Internet, telephone networks, or the ionosphere itself. High-power amateur radio stations using moon bounce can serve as communications trunk lines linking parts of the nation and the World during major long-duration emergencies. In his comments, Mr. Carroll suggested that a higher power limit be authorized to allow for a higher data transmission rate through this high-loss signal path.

In my own case, I invented a wireless data bus for computers and digital communications equipment (U.S. Patent # 6,771,935). This invention replaces physical data bus cables with wireless radio frequencies. This allows large numbers of circuit cards to be interconnected, and it provides protection from any damaging current surges. I invented this device based on my amateur radio experience, and assigned the invention to my employer at that time.

Requested Action

Amateur radio operation does not mix well in the same sub band with unlicensed Part 15 devices. The Part 15 devices tend to fill up the sub band preventing the amateur operators from hearing distant amateur radio stations that are calling requesting a radio contact. It is important to remember that amateur radio stations are manually operated and they transmit at random times on differing frequencies. If a sub band is filled with numerous Part 15 devices then the amateur radio operators will never hear the weak signal stations that they are attempting to contact.

As a result of this basic situation, amateur radio stations should be allocated frequency bands that are not shared with numerous Part 15 devices.

Respectfully submitted,

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Reference One: Comments of John A. Carroll, GN Docket No. 12-91, In the Matter of Emergency Communications by Amateur Radio and Impediments to Amateur Radio Communications, filed on June 11, 2012, posted on ECFS on June 12, 2012, third page

Appendix A – My Patents and Document References

Some of my document references are listed below:

United States Patent 6,771,935, Wireless Bus August 3, 2004

United States Patent 3,280,929 Ground-Effect Machine October 25, 1966

United States Patent 3,280,930 Ground-Effect Vehicle October 25, 1966

“Demonstration and Development of Amateur Radio Applications of Natural Vacuum Electronics”; Nickolaus E. Leggett, N3NL - 22nd AMSAT Space Symposium and Annual Meeting October 8-10, 2004 in Arlington, Virginia

“A ‘Lighthouse’ Protocol for Random Microwave Contacts”, Nickolaus E. Leggett, N3NL, QEX The Experimenter’s Exchange – Technical Notes July/August 2004 – American Radio Relay League, Newington, CT.

Wireless bus invention – U.S. Patent # **6,771,935**

Abstract

In order to avoid mechanical assembly problems and transmission of undesired electrical currents among circuit cards or boards in a telecommunications switch or similar digital device, a conventional hard-wired midplane bus is replaced by a wireless bus. The wireless bus includes a radio frequency or light wave transceiver on each card. Antennas on respective cards can either be oriented within direct line-of-sight of each other, or can project into a waveguide which directs the transmitted signals past all the other antennas. For example, the waveguide may be a metal enclosure which surrounds all the cards. Alternatively, respective aligned apertures in the cards can define a continuous transmission path. A data rate exceeding 1 megabit per second and a transmission power on the order of 1 milliWatt are preferred, since the bus is intended for use within a single switch housing. Radio frequencies in the middle to high microwave range or light frequencies in the visible range are preferred for providing sufficient bandwidth and to facilitate servicing.